

REMARKS

In the Office Action mailed February 7, 2005 in the above case, claims 14-16 were examined. Claims 14-16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Beauchemin* (U.S. Patent No. 5,720,971) and were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Toshiyasu* (JP 05192093). Reconsideration and withdrawal of these rejections is respectfully requested in view of the above amendments and the remarks which follow.

A. Amended claims 16, 17 and 18 are Patentably Distinguishable over U.S. Patent No. 5,720,971 to *Beauchemin* and the *Toshivasu* Abstract.

Pending claims 16-18, when examined, recited methods comprising the steps of

treating the feed with a *Trichoderma viride* cellulase enzyme; and
feeding the treated feed to the dairy cows

Each of these claims has now been amended so that the methods "consist essentially of" the recited method step and the feed treating step is now limited to

treating the feed with a **composition consisting essentially of a *Trichoderma viride* cellulase enzyme**

These limitations are distinguishing over *Beauchemin's in vivo* method which requires the treatment of feed with (a) a synergistic combination of one of two cellulose enzymes in combination with a substantial amount of an xylanase enzyme (b) in a manner which requires absorption and adherence of the multi-element enzyme combination to the feed material.

1. The Transitional Phrase "Comprising" has been Replaced with "Consisting Essentially of" and the Recited Enzyme is Likewise Limited

The claims as examined recited the "open-ended" transitional term "comprising" which does not exclude additional, unrecited elements or method steps. MPEP § 2111.03. The claims have now been amended to recite the "consisting essentially of" transitional phrase which limits the scope of the claims to the specified materials or steps "and those that do not materially affect the basic and novel characteristics of the claimed invention. *Id.* The MPEP further notes that

If an applicant contends that additional steps or materials in the prior art are excluded by the recitation of “consisting essentially of,” applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant’s invention.

Id. In the present case, both *Beauchemin* and *Toshivasu* teach how additional, essential materials would change applicant’s invention, were those additional materials added to applicant’s claimed methods, as detailed below.

2. *Beauchemin*’s Method Requires Both a Cellulase and an Xylanase to Create a Synergistic Relationship Which Does Not Result When one of the Enzymes is Separately Used.

Beauchemin teaches an “unexpected synergistic effect between the activities of the xylanase and cellulase on improving feed material digestability.” *Beauchemin*, in effect, is teaching that xylanase has “a material effect” on cellulase in improving feed material digestability. Thus, *Beauchemin* itself teaches that the additional xylanase component would materially change the characteristics of applicant’s claimed method, which is precluded through use of the “consisting essentially of” composition and method steps language.

Moreover, *Beauchemin* nowhere teaches the actual feeding to dairy cows, feed to which is added only cellulase, for which milk output is measured or increased. Rather, *Beauchemin* teaches away from the present invention in stating that “if fibrolytic enxzymes such as cellulase and xylanase which are themselves proteins, are simply applied to feed stuffs, the fibrolytic enzymes are rapidly digested in the rumen before they can increase the fiber digestion. *Col. 1, lines 62-65.* Example 4 of *Beauchemin* teaches how the “Enzymes **must** be applied to dry feed materials and must be absorbed into the adhere to the feed material prior to digestion”. *Col 16, lines 25-29.* These required method steps are detailed at *col. 10, lines 31-47.* The method steps which *Beauchemin* describes and claims are not required by applicant’s method.

Accordingly, the use of the “consisting essentially of” language in the present case is one which it fully distinguishes over the art of record—in this case, over *Beauchemin*.

3. Toshivasu's Method Requires An Enzyme **with** Essential Amino Acids.

Toshivasu claims an improvement in milk yield of a ruminant through use of high-quality feed additives achieved "by blending an enzyme exhibiting a vegetable tissue disorganization activity with essential amino acids". *Toshivasu* contains no teaching or suggestion that its feed additive would be effective to obtain the improvements believed to be related to improved protein digestion, efficacy and the like without the inclusion of amino acids, the building-blocks of protein.

Accordingly, the "consisting essentially of" limitation associated with feed additive cellulase composition of the present invention is patentably distinguishing over *Toshivasu*.

B. Conclusion.


In view of the above amendments, all claims now being in form for allowance, such action is respectfully requested. Should any issues remain, the Examiner is kindly asked to telephone the undersigned.

C. Petition for 3-Month Extension.

The undersigned hereby petitions for a 3-month extension. Please charge the large entity 3-month extension fee and the fee for filing the Information Disclosure Statement filed herewith to Deposit Account No. 50-1123.

Respectfully submitted,

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